**What Is Claimed Is:**

Sub A3

1. A compact, fiber reinforced rod for optical cables comprising:

a plurality of elongated fiber members encased in a matrix of a UV curable vinyl ester resin material; and

an outer topcoat layer substantially surrounding said plurality of elongated fiber members.

2. The reinforced rod of claim 1, wherein said elongated fiber members comprises an E-type glass fiber member.

3. The reinforced rod of claim 1, wherein said elongated fiber members comprises an S-type glass fiber member.

4. The reinforced rod of claim 1, wherein said elongated fiber members are selected from the group consisting of E-type glass fiber members, an S-type glass fiber members, and combinations thereof.

5. The reinforced rod of claim 1, wherein said elongated fiber members are selected from the group consisting of E-type glass fiber members, S-type glass fiber members, high strength synthetic strands of poly(p-phenylene-2,6-benzobisoxazole) fiber members, and combinations thereof.

6. The reinforced rod of claim 1, wherein said UV curable vinyl ester resin material is selected from the group consisting of Vinch 500 and 17-41B resin, both manufactured by Zeon Technologies.

7. The reinforced rod of claim 1, wherein said outer topcoat layer comprises a polybutylene terephthalate/polyether glycol copolymer material.

8. The reinforced rod of claim 1, wherein said outer topcoat layer comprises an ethylene acrylic acid copolymer material.

9. An optical fiber cable 10 comprising:

a plurality of optical fiber members;

a plurality of flexible fiber reinforcement fiber members surrounding said plurality of optical fiber members;

a polymer jacket member surrounding said plurality of flexible fiber reinforcement fiber members ; and

a fiber reinforcement rod contained within said plurality of optical fiber members, said fiber reinforcement rod comprising a plurality of elongated fiber members, a UV curable vinyl ester resin material coated to and surrounding said plurality of fiber members, and a topcoat layer surrounding said UV curable resin material.

10. The optical fiber cable of claim 9, wherein said plurality of elongated fiber members is selected from the group consisting of E-type glass fiber

members, S-type glass fiber members, high strength synthetic strands of poly(p-phenylene-2,6-benzobisoxazole) fiber members, and combinations thereof.

11. The optical fiber cable of claim 9, wherein said UV curable vinyl ester resin material is selected from the group consisting of Vinch 500 and 17-41B resin, both manufactured by Zeon Technologies.

12. The optical fiber cable of claim 9, wherein said topcoat layer comprises a polybutylene terephthalate/polyether glycol copolymer material.

13. The optical fiber cable of claim 9, wherein said topcoat layer comprises an ethylene acrylic acid copolymer material.

14. A method for forming an optical fiber cable comprising:

forming a fiber reinforcement rod comprising a plurality of elongated fiber members encased within a UV curable vinyl ester resin matrix and surrounded by a polymer topcoat material;

forming a core assembly by wrapping said plurality of optical fiber members around said fiber reinforced rod;

coupling a plurality of flexible fiber reinforcement members around said core assembly; and

encasing said plurality of fiber reinforcement members and said core assembly with a polymer jacket member.

15. The method of claim 14, wherein forming a fiber reinforcement rod comprises:

providing a plurality of elongated fiber members;

introducing said plurality of fiber members under tension to a heated resin spray applicator;

coating said plurality of fiber members with a UV curable vinyl ester resin material within said heated resin spray applicator, wherein said UV curable vinyl ester resin material is applied at a temperature between approximately 65 and 100 degrees Celsius;

curing said UV curable vinyl ester resin material onto and around said plurality of fiber members using a ultraviolet light source to form a fiber reinforcement rod precursor;

introducing said fiber reinforcement rod precursor to an application box;

encasing said fiber reinforcement rod precursor with a topcoat material layer, wherein said topcoat material layer is applied at between approximately 150 and 230 degrees Celsius; and

cooling said topcoat material layer in a water bath.

16. The method of claim 15, wherein providing a plurality of elongated fiber members comprises providing a plurality of elongated fiber members selected from the group consisting of E-type glass

fiber members, S-type glass fiber members, high strength synthetic strands of poly(p-phenylene-2,6-benzobisoxazole) fiber members, and combinations thereof.

17. The method of claim 15, wherein coating said plurality of fiber members comprises coating said plurality of fiber members with a UV curable vinyl ester resin material, wherein said UV curable vinyl ester resin material is selected from the group consisting of Vinch 500 and 17-41B resin, both manufactured by Zeon Technologies.

18. The method of claim 15, wherein encasing said fiber reinforcement rod precursor with a topcoat material layer comprises coating said fiber reinforcement rod precursor with a topcoat material selected from the group consisting of a polybutylene terephthalate/polyether glycol copolymer topcoat material and an ethylene acrylic acid copolymer topcoat material.

19. A method of forming a fiber reinforcement rod comprising:

providing a plurality of elongated fiber members;

introducing said plurality of fiber members under tension to a heated resin spray applicator;

coating said plurality of fiber members with a UV curable vinyl ester resin material within said heated resin spray applicator, wherein said UV curable vinyl

ester resin material is applied at a temperature between approximately 65 and 100 degrees Celsius;

curing said UV curable vinyl ester resin material onto and around said plurality of fiber members using a ultraviolet light source to form a fiber reinforcement rod precursor;

introducing said fiber reinforcement rod precursor to an application box;

encasing said fiber reinforcement rod precursor with a topcoat material layer, wherein said topcoat material layer is applied at between approximately 150 and 230 degrees Celsius; and

cooling said topcoat material layer in a water bath.

20. The method of claim 19, wherein providing a plurality of elongated fiber members comprises providing a plurality of elongated fiber members selected from the group consisting of E-type glass fiber members, S-type glass fiber members, high strength synthetic strands of poly(p-phenylene-2,6-benzobisoxazole) fiber members, and combinations thereof.

21. The method of claim 19, wherein coating said plurality of fiber members comprises coating said plurality of fiber members with a UV curable vinyl ester resin material, wherein said UV curable vinyl ester resin material is selected from the group consisting of Vinch 500 and 17-41B resin, both manufactured by Zeon Technologies.

22. The method of claim 19, wherein encasing said fiber reinforcement rod precursor with a topcoat material layer comprises coating said fiber reinforcement rod precursor with a topcoat material selected from the group consisting of a polybutylene terephthalate/polyether glycol copolymer topcoat material and an ethylene acrylic acid copolymer topcoat material.